
Peelable Seal
Meal
o-Eat
MENU NO. 413
al
Dinner
413
MURPHY OIL SHRIMP
CANAL LEEK SOUP
APPLE SALAD
OWL
SH LAME DUCK SAUCE
E WITH SOUR GRAPES
ARTRAIN ESPRESSO
Peelable Seal
MENU NO. 911
ARTICHOKE FEMA
KATRINA BOUILLABAISE
9TH WARD CRAB MOLD SALAD
BAYOU MAMA'S JAMBALAYA
BANANAS FESTER
LAKE PONTCHARTRAIN CAPPUCCINO
Meal
Ready-to-Eat, Individual
U.S. Government Property


HAPPY FEMA GRAS
POLICE

News* in New Orleans: March 8th 2006

("K" + 6 mos. + 1 wk)

**Times Picayune*

Data for

Lessons Learned &

Future of the Region

Shirley Laska, PhD
Director, Center for Hazards Assessment,
Response & Technology (CHART)
University of New Orleans

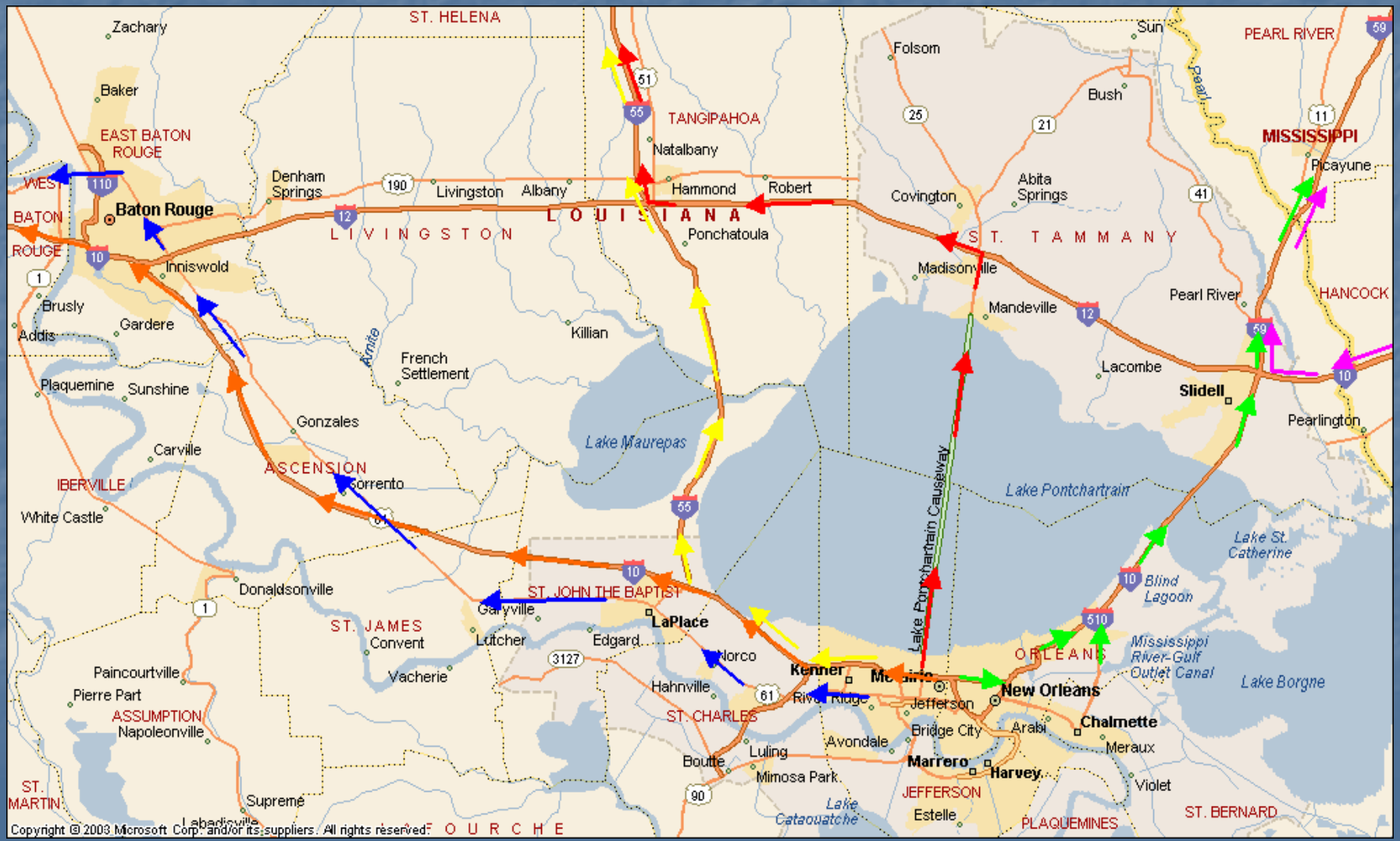
NOAA Coastal and Ocean Program Managers Meeting
March 9, 2006

News, March 8th, 2006

- 2more bodies found in house ruble, 10 in last month
- 300 still missing
- Katrina death toll to date: 1080
- Bio of 75 yr old 9th Ward woman who remained behind and died

Lessons Learned

All Routes Out Contra Flow



Hurricane Evacuation Survey

UNO Survey Research Center & CHART

- Full collaborative project
- Emergency Managers took ownership
- Findings used to develop public education programs
- Death rate way below what expected

Evacuation Needs of Carless/Aged/Infirmed Critical

- Lessons before Katrina & After
  - “Operation Brother’s Keeper” Project
  - Elderly died disproportionately to others

Future of the Region

- Evacuation accomodating all residents
- Until permanent structures, special response required
- Evacuation “fatigue” will factor in decisions to reside in area

News, March 8th, 2006

- Investigation reveals Corps did not adopt newer storm data
  - Continued to use 1959 data until 1990's


CABLE
CROSSING


DEERE

“Scientists as Whistleblowers for Catastrophic Disasters: <<< What Went Wrong with Katrina?” >>>

slaska@uno.edu

- ***Natural Hazards Observer*** ***(University of Colorado Hazards Center)***
- **Vol. XXIX No. 2 November 2004**
- ***Disasters Waiting to Happen . . . Sixth in a Series***

- **"What if Hurricane Ivan Had Not Missed New Orleans?**
- **What if Ivan Had Hit New Orleans?"**

- **Shirley Laska, University of New Orleans**

►

- **“New Orleans was spared, this time, but had it not been, Hurricane Ivan would have: (physical/storm effects excerpt)**
  - Pushed a 17-foot storm surge into Lake Pontchartrain
  - Caused the levees between the lake and the city to overtop and fill the city ‘bowl’ with water from lake levee to river levee, up to20 feet deep
  - Flooded the north shore suburbs of Lake Pontchartrain with waters pushing as much as seven miles inland
  - Inundated inhabited areas south of the Mississippi River and
  - **Severely damaged Up to 80 percent of the structures in these flooded areas from wind and flooding ….** due to a levee system that is unable to keep up with the increasing flood threats from a rapidly eroding coastline.”

"Whistleblowing" Useful concept for role of Katrina scientists

- Warning of serious danger
- Revealing problem not previously (adequately) exposed
- Desiring those in authority to do something to respond
- Anticipating that robust publicity is needed to prompt those responsible to respond
- Discrediting and stigmatizing of scientists (alarmists/exaggerators) before Katrina, makes advocacy challenge even greater.

Acting as a Choir

- Interdisciplinary Efforts to Reflect Scope
  - Articulating Importance of Each View
  - Sharing of PowerPoint Slides across Disciplines
- Being Responsive to the Media
- Referring Media to Other Advocates
- Collaboration of Univ Scientists and “Practitioners”

“I.D.ing” the Whistleblowers

Active	Total	Very
Physical scientists	11	81%
Biologists	11	81%
Social/Econ/Legal	17	47%
Engineers	8	38%
Total	47	62%

Advocates' Other Characteristics

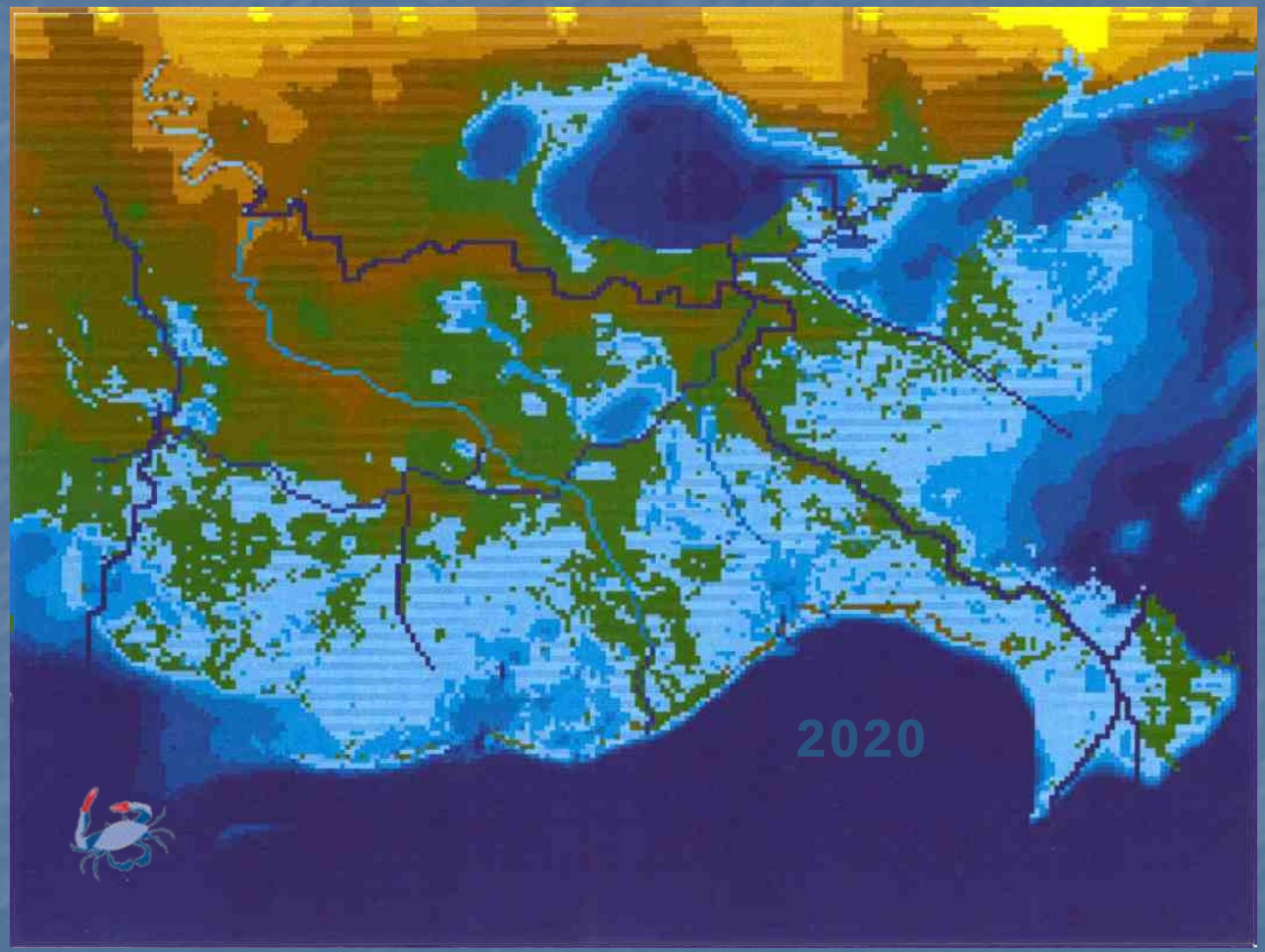
- Percent with Doctorates 85%
- Percent are Profs/Univ Researchers 72%
  - All Current/Former Profs at Louisiana Universities or Long-time Affiliated Research Collaborators
- Others: Local, State, Fed Agencies, Env NGOs, Env Consulting Firms

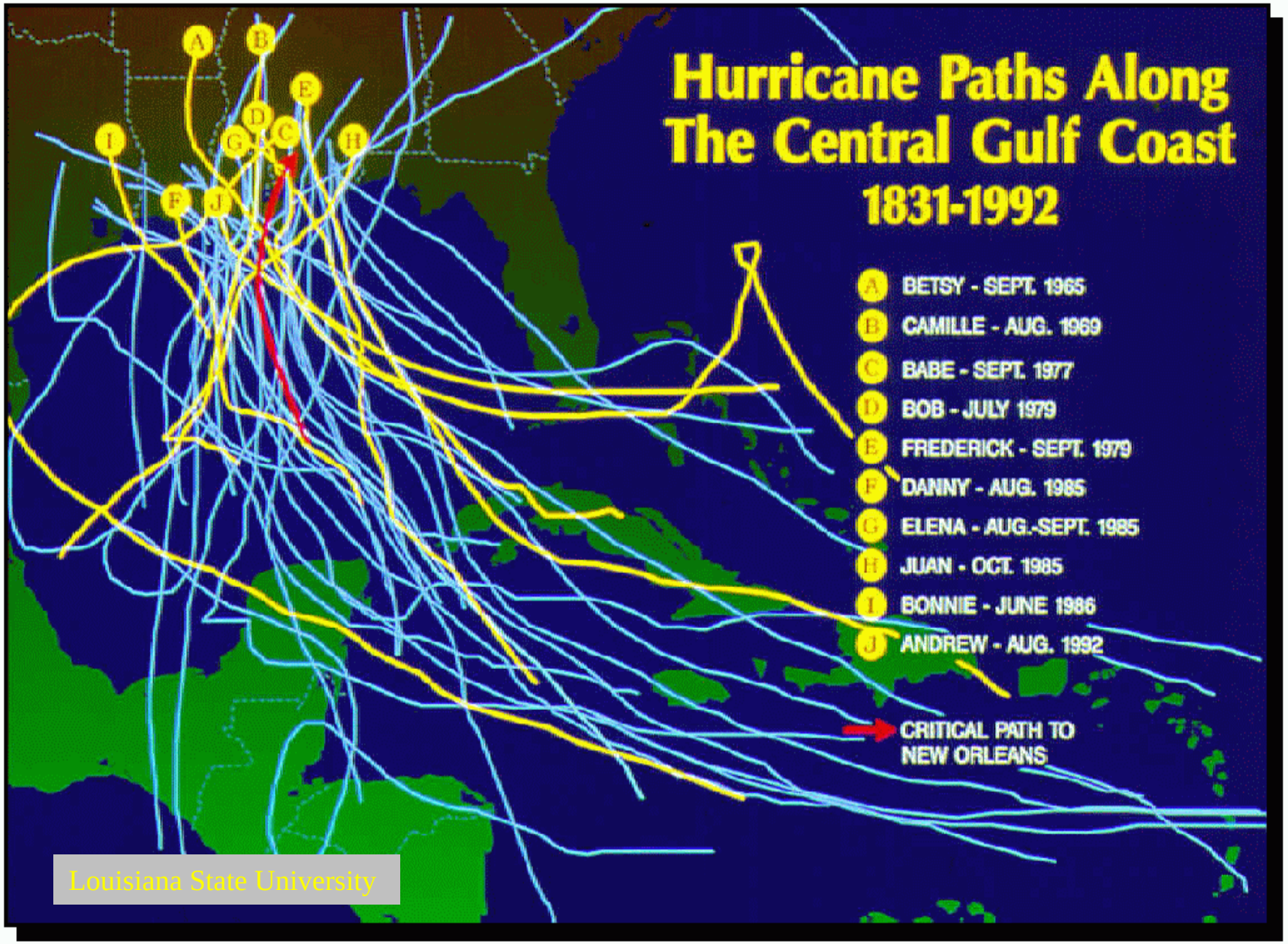
Typical Respondent's Answers

- Groups Presented to:
  - "AGU, GSA, ASCE, NAS (one per year for past 5 yrs)"
- Professional Publications:
  - "15 in coastal geology and engineering journals"
- Popular Print Media:
  - "Well over 100 newspaper articles, magazine and lay science journals"
- TV, Documentaries, Radio Interviews:
  - "over 50 including local, national and international"

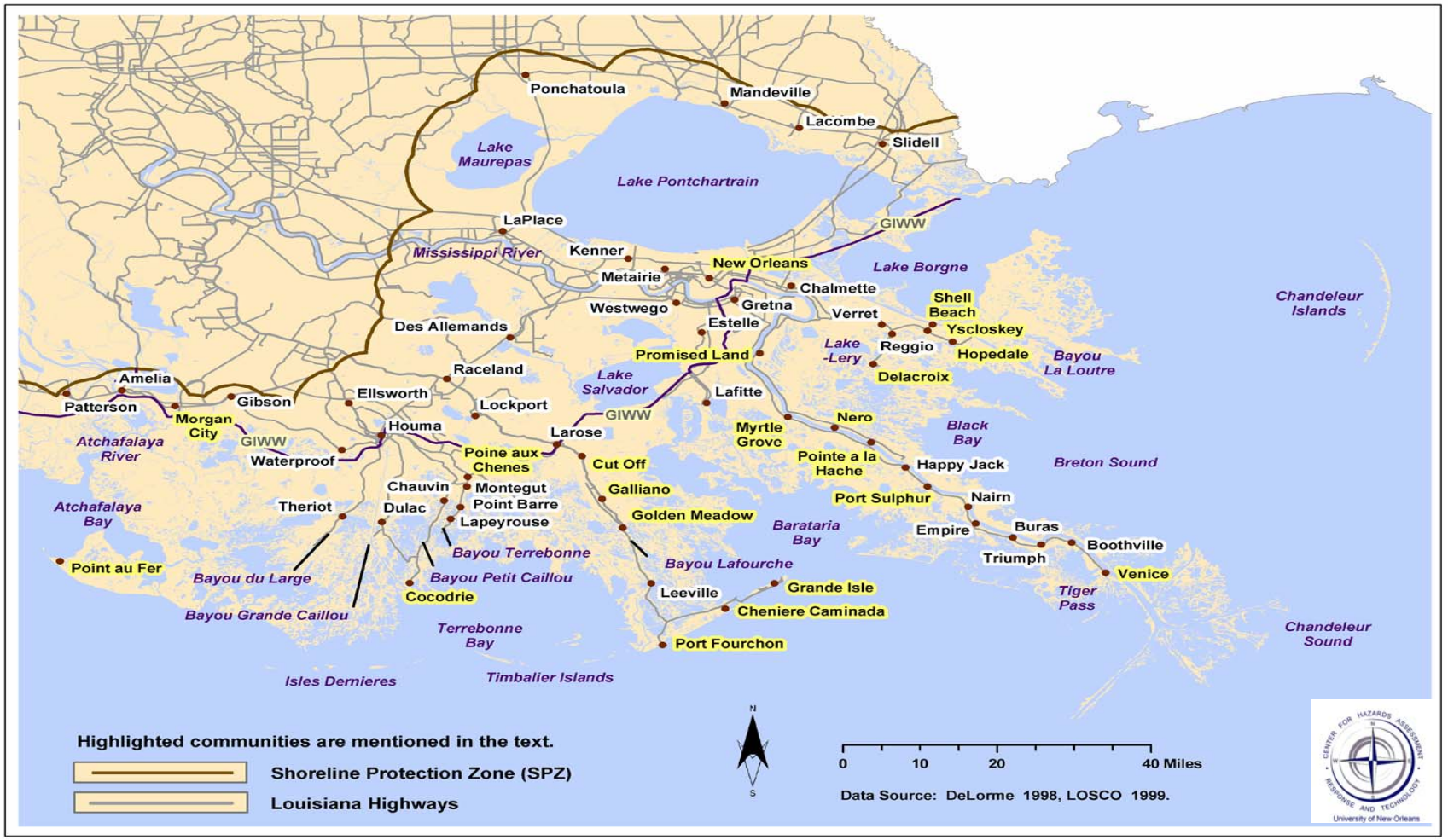
Manner in Which “Bowl” Will Fill Based Upon Elevation

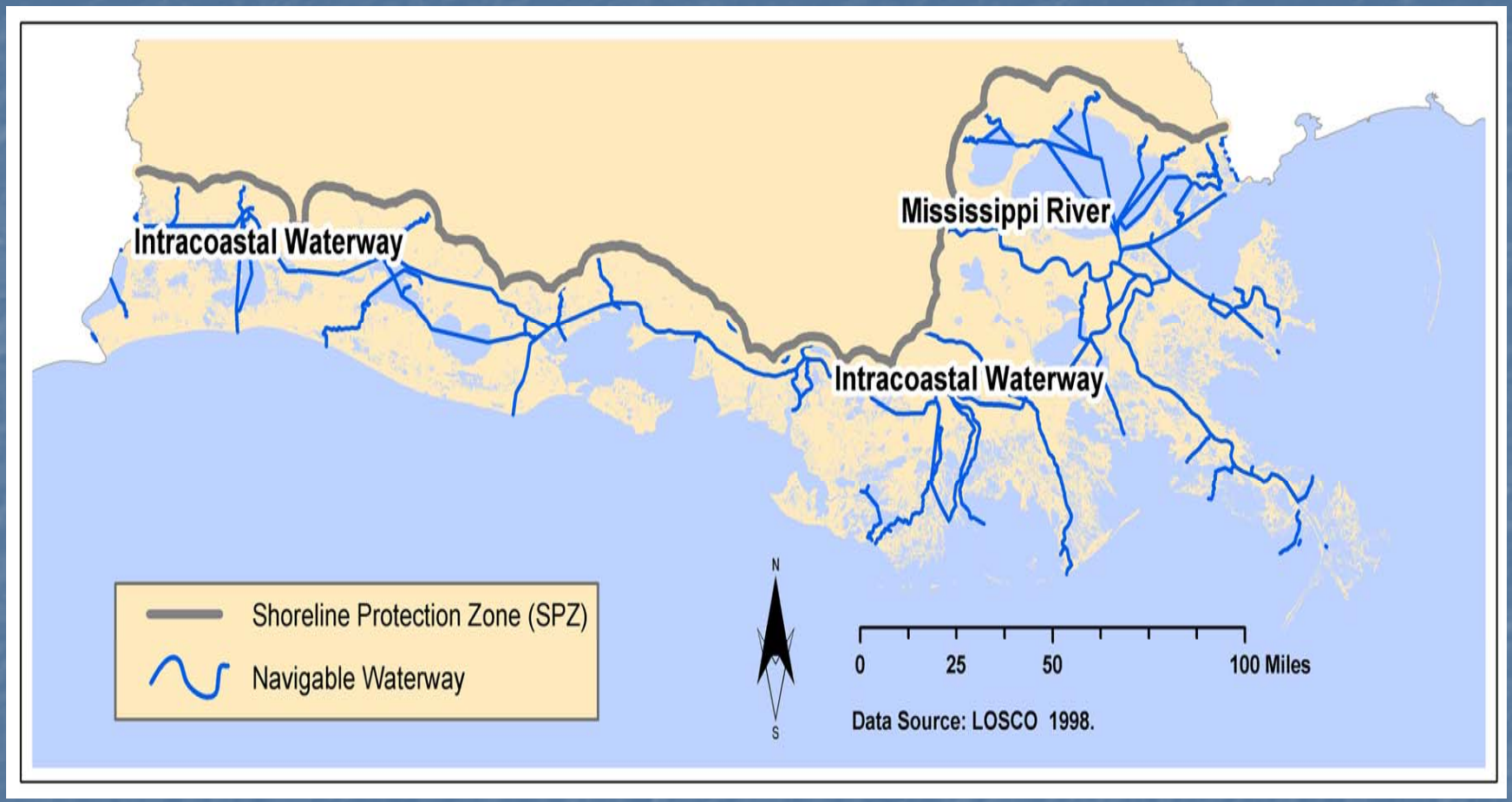
Past and Projected Wetland Loss in the BTNEP (1839 to 2020)



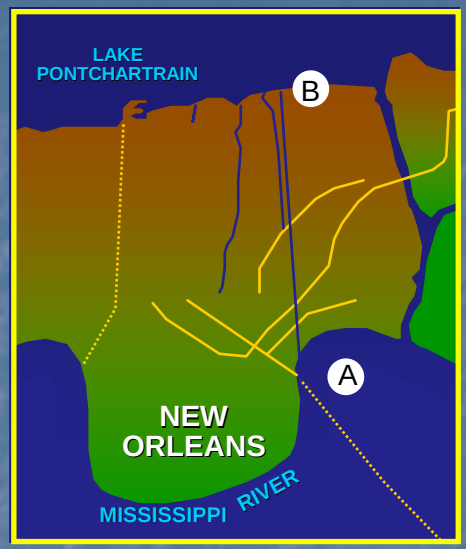

Hurricane Paths Along
The Central Gulf Coast
1831-1992
A BETSY - SEPT. 1965
B CAMILLE - AUG. 1969
C BABE - SEPT. 1977
D BOB - JULY 1979
E FREDERICK - SEPT. 1979
F DANNY - AUG. 1985
G ELENA - AUG.-SEPT. 1985
H JUAN - OCT. 1985
I BONNIE - JUNE 1986
J ANDREW - AUG. 1992
CRITICAL PATH TO
NEW ORLEANS
Louisiana State University

Louisiana Communities East

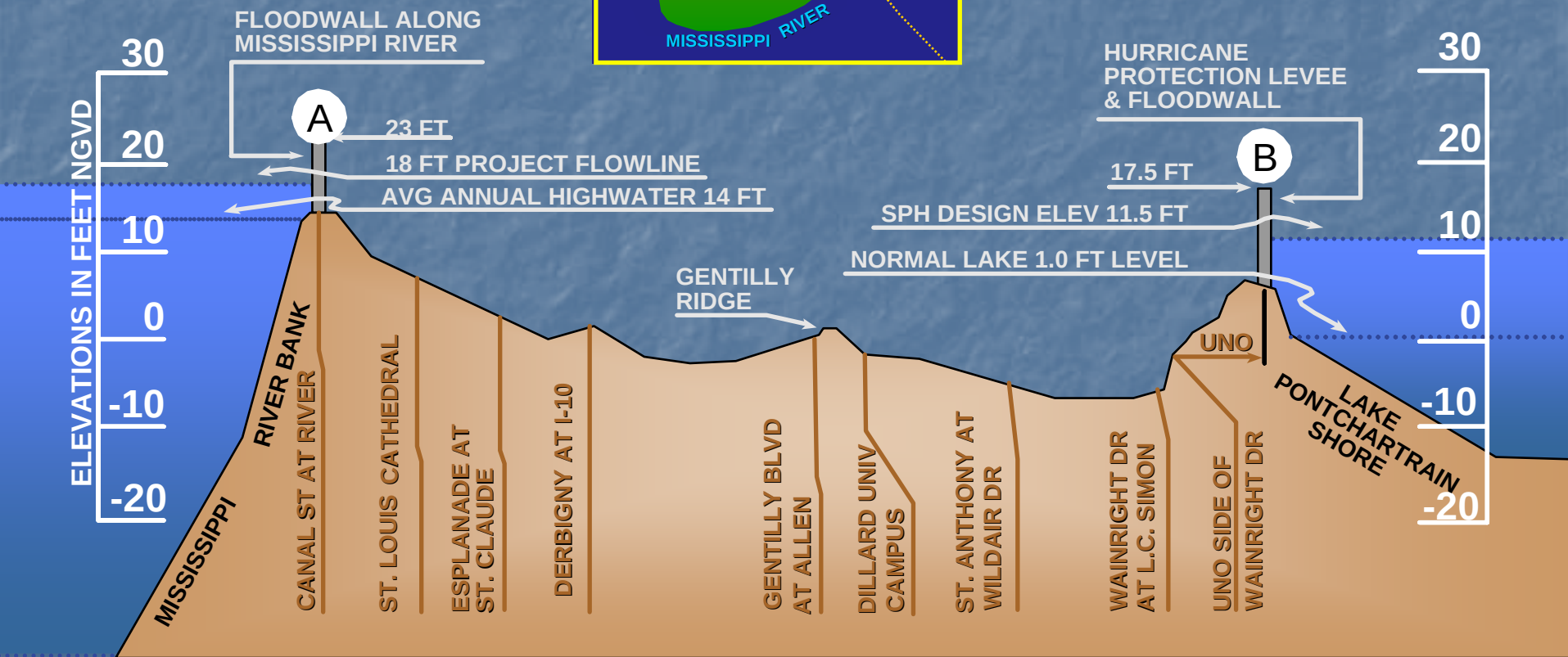



Intracoastal Waterway
Mississippi River
Intracoastal Waterway
Shoreline Protection Zone (SPZ)
Navigable Waterway
N
S
0
25
50
100 Miles
Data Source: LOSCO 1998.

City of New Orleans Ground Elevations



From Canal St. at Mississippi River to the Lakefront at U.N.O.



IF GEORGES HADN'T TURNED

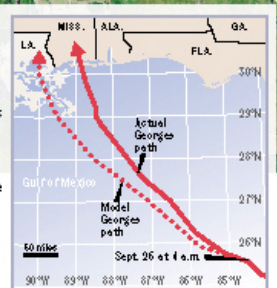
New Orleans most recently dodged catastrophic flooding in 1998, when Hurricane Georges cut across the Gulf of Mexico on a beeline to the mouth of the Mississippi River. As half the population fled, the storm veered to the east and made landfall in Mississippi. The hurricane caused flooding in St. Bernard Parish and also pushed waves from Lake Pontchartrain up against its south shore levees, leaving many to ponder: What if?

KEY:
- Surge water flow
- Wind direction
- Model hurricane track

MANDEVILLE
SLIDELL
Pearl River
Lake Pontchartrain
Bayou Liberty
LAPLACE
Approximate diameter of hurricane's eye
Chef Menteur Pass
EASTERN NEW ORLEANS
No flooding at UNO
Intracoastal Waterway
KENNER
Over 8 feet
4-8 feet
METAIRIE
Over 8 feet
Over 8 feet
4-8 feet
Lake Borgne
MORGO
Mississippi River-Gulf Outlet
NEW ORLEANS
9TH WARD
ST. BERNARD PARISH
Dry land on Metairie Ridge
less than 4 feet
WEST BANK
Lac des Allemands
Lake Cataouatche
Lake Salvador
Lake Pontchartrain
Lake Bery

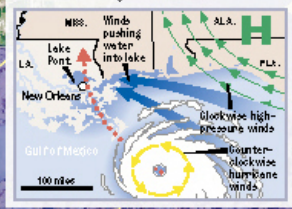
1 THE MODEL

A computer model designed by LSU scientists Joseph Suhayda and Vibhas Jayaveluthan and used by government agencies to prepare evacuation plans shows what would have happened if Georges had not turned. This scenario assumes that the storm continued on the track and intensity forecast by the National Hurricane Center on Saturday, Sept. 26, 1998, at 4 a.m. In the model, Georges intensifies to a Category 3 with 115-mph winds when it makes landfall just west of the mouth of the Mississippi. During the next two days, it moves slowly northwest, weakening to a Category 1 and stalling over eastern New Orleans.



2 PUMPED UP LAKE

Easterly winds in advance of the storm would pump water from Lake Borgne and from Breton and Chandeleur sounds into Lake Pontchartrain, raising the lake's surface by 5 feet.



3 SLIDELL SOAKED

Large parts of Slidell would be inundated, but the waters would recede rapidly with no levees to contain them.

4 LAKE LEVEES HOLD

Winds on the west side would push water against the hurricane-protection levees.

5 ST. CHARLES SUBMERGED

Here, water in the lake would reach heights of 3-8 feet above normal, spilling into wetlands and towns in St. Charles and St. John parishes. The water would be deepest near the river levees.

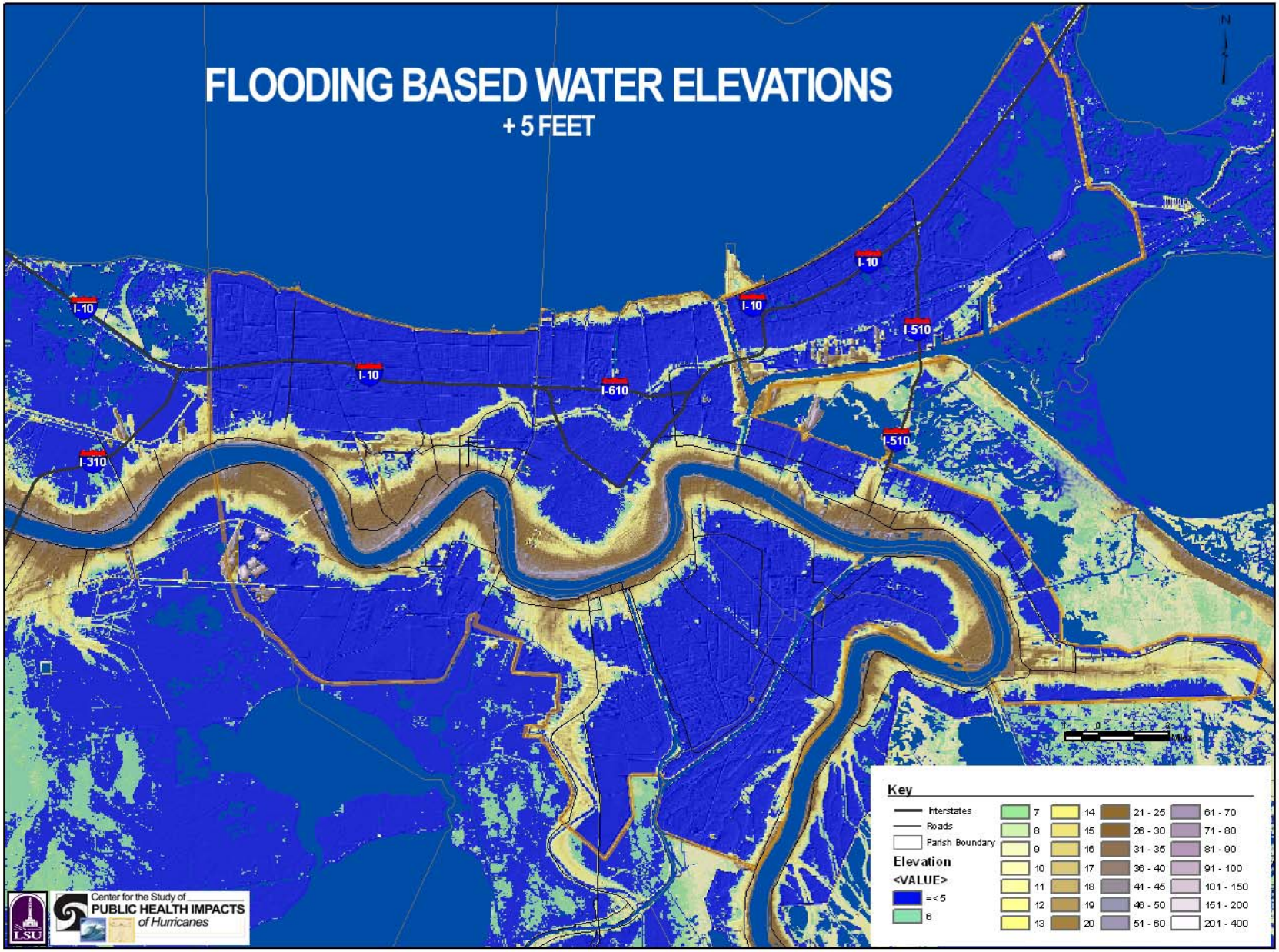
6 GRAVITY'S GATEWAY

Relentless winds from the stalled hurricane push a dome of water 14 feet above sea level at the levee. The model says that water would top low levees and floodwalls and move east into Jefferson and Orleans parishes. Jefferson Parish officials say some areas would be sandbagged to 10 feet but protection would be lower near the river.

7 FILLING THE BOWL

With the storm stalled, water continues to pour into Jefferson and Orleans, filling the bowl with as much as 8 feet of water until it reaches natural ridges or the Mississippi River levees.

New Orleans Times Picayune


FLOODING BASED WATER ELEVATIONS
+ 5 FEET
I-10
I-10
I-10
I-10
I-510
I-610
I-310
I-510
N
Key
Interstates
Roads
Parish Boundary
Elevation
<VALUE>
=< 5
6
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14
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17
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19
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21 - 25
26 - 30
31 - 35
36 - 40
41 - 45
46 - 50
51 - 60
61 - 70
71 - 80
81 - 90
91 - 100
101 - 150
151 - 200
201 - 400
Center for the Study of
PUBLIC HEALTH IMPACTS
of Hurricanes
LSU

Lessons Learned

- Pay attention to science
  - Means of communicating concerns
  - Organizations receptive to “hearing”

Future of the Region

- Much depends on ability to apply science and engineering appropriately
  - Flood elevation decisions
  - Coastal restoration
  - Appropriate levee rebuilding and new construction
  - Coastal building code implementation
  - Drainage projects within levees

News, March 8th, 2006

- Demolition begins in Orleans Parish
  - 125 in first wave – off slabs, blocking streets
- St. Bernard Parish officials meet to identify areas that cannot be rebuilt
- $4.3 billion requested by President to provide adequate buyouts not in Supplemental bill

Lessons

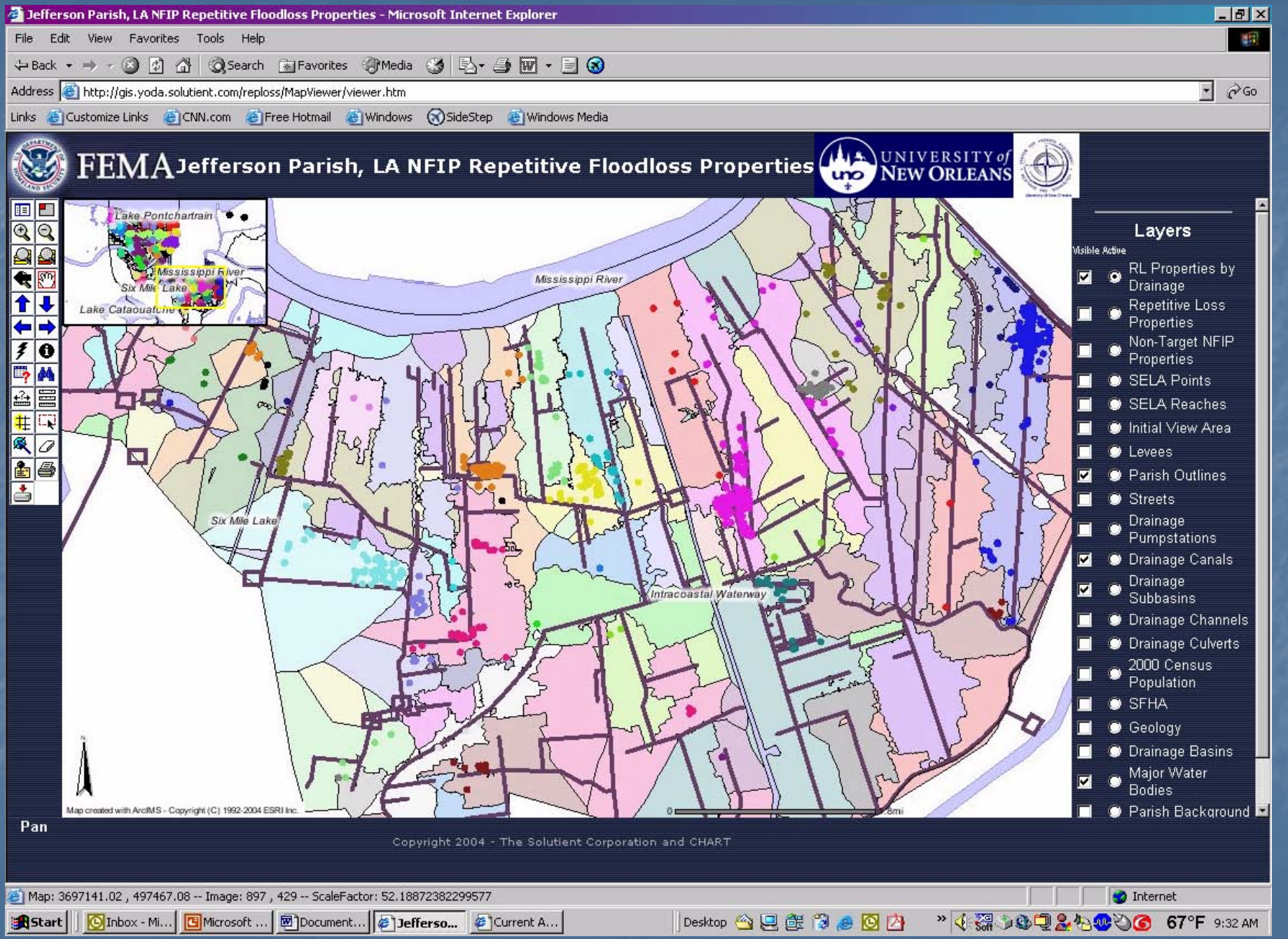
- Decisions not to permit rebuilding very traumatic for residents—cause protest
- Indecisions and inadequate govt. help will prevent residents from resettling in area

Lessons

- Ways of rebuilding safely are known

Lessons

- Careful analysis of vulnerable areas and benefits of drainage projects (SELA) are productive for reducing risk


Jefferson Parish, LA NFIP Repetitive Floodloss Properties - Microsoft Internet Explorer
File Edit View Favorites Tools Help
Back Search Favorites Media
Address http://gis.yoda.solutient.com/reploss/MapViewer/viewer.htm
Links Customize Links CNN.com Free Hotmail Windows SideStep Windows Media
FEMA
Jefferson Parish, LA NFIP Repetitive Floodloss Properties
UNIVERSITY of NEW ORLEANS
Lake Pontchartrain
Mississippi River
Six Mile Lake
Lake Cataouatche
Mississippi River
Six Mile Lake
Intracoastal Waterway
Layers
Visible Active
RL Properties by Drainage
Repetitive Loss Properties
Non-Target NFIP Properties
SELA Points
SELA Reaches
Initial View Area
Levees
Parish Outlines
Streets
Drainage Pumpstations
Drainage Canals
Drainage Subbasins
Drainage Channels
Drainage Culverts
2000 Census Population
SFHA
Geology
Drainage Basins
Major Water Bodies
Parish Background
Map created with ArcIMS - Copyright (C) 1992-2004 ESRI Inc.
0 8mi
Pan
Copyright 2004 - The Solutient Corporation and CHART
Map: 3697141.02 , 497467.08 -- Image: 897 , 429 -- ScaleFactor: 52.18872382299577
Internet
Start
Inbox - Mi...
Microsoft ...
Document...
Jefferso...
Current A...
Desktop
67°F
9:32 AM

Relevancy for Other Coastal Areas

- Realization causing paradigm shift
  - Nation realizing, it is not simply coastal Louisiana problem
- Important to use coastal Louisiana as national case study
  - Can't create "drill" with any degree of reality currently going on in coastal Louisiana